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ABSTRACT

This paper presents: (1) an overview of the National Center for Higher Education Management Systems DELPHI survey to identify changes in postsecondary education, (2) an interpretation of the results of that survey, and (3) an interpretation of the changes in planning and management that will occur when the forecasted changes in education take place. The first two topics are treated in considerably greater detail in the NCHEMS report, "A Forecast of Changes in Postsecondary Education." The new material presented in this paper is the analysis of the planning and management implications of changes in student enrollments, certification methods, faculty-institutional relationships, program content, and governance issues. (Author)

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National Center for Higher Education Management Systems at WICHE

# CHANGE IN HIGHER EDUCATION MANAGEMENT

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VAUGHN E. HUCKFELDT

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WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION

# CHANGE IN HIGHER EDUCATION MANAGEMENT

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This paper presents (1) an overview of the NCHEMS DELPHI survey to identify changes in postsecondary education, (2) an interpretation of the results of that survey, and (3) an interpretation of the changes in planning and management that will occur when the forecasted changes in education take place. The first two topics are treated in considerably greater detail in the NCHEMS report, A Forecast of Changes in Postsecondary Education. The new material presented in this paper is the analysis of the planning and management implications of changes in student enrollments, certification methods, faculty-institutional relationships, program content, and governance issues.

# PREFACE

This research report has been developed by Vaughn Huckfeldt of the NCHEMS research staff as a summary of the analysis of a forecast by 385 panel members in a DELPHI survey; it includes an assessment of the potential impact of the forecasted changes on management. The survey, funded by the Ford Foundation, was conducted during the first half of 1972. An earlier draft of this document was circulated for comment to the Futures Committee of the NCHEMS Board of Directors and other selected reviewers. This document is released for general use with the caution that the assumptions should be clearly noted and the reminder that it is not an official opinion or position of NCHEMS, WICHE, or the Ford Foundation.

This document does not attempt to identify the impact of changes relative to a specific institution or agency. The document provides the author's analysis of the impact of a forecast of general trends and changes in higher education but it does not provide basic reasons or predict events that will lead to these changes.

Many methods exist for forecasting the future, including scenarios, cross-impact matrices, extrapolations, projections, and the DELPHI method. These methods are, for the most part, more art than science, and they contain a large amount of uncertainty in results. Of the various reasons for mistrusting forecasts, two primary ones are the poor track record for accuracy of forecasts and the temptation to assume that forecasts hold the "truth" about the future. Also, many of the forecasting methods provide a great

amount of latitude in the interpretation of the forecast data. This interpretation is dependent on the judgment of the analyst and the adoption of sound analytic methods. In regard to the "truth" identified by this DELPHI forecast, it should be pointed out that the NCHEMS DELPHI has no claim to knowledge of the facts of the future and does not deny the uncertainty of the results. What this forecast does claim is to be a collection of opinions on possible changes from a cross-section of the higher education community. This view from the DELPHI panel is a look toward where higher education is going to be over the short range rather than where higher education will be twenty years from now. Thus it is recommended that this forecast, like all others, be used with caution. The projections should be used primarily as checkpoints for comparison with particular situations and other forecasts.

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# THE NCHEMS DELPHI SURVEY

The identification of change in postsecondary education is today more important than ever before for reasons expressed by Clark Kerr (1971) in an address presented at the Twenty-Sixth National Conference on Higher Education:

> Higher Education in the United States is facing a period of uncertainty, confusion, conflict, and potential change, and it has little to guide it in its past experience. For most of its three and one-third century history, it has had a manifest destiny and through the period from 1920 - 1970 was marked by rapid change and some student unrest. Two factors remained constant: public belief in and support of higher education, and the campus and society were both changing, but in compatible ways. This is no longer so and higher education is faced with a staggering number of uncertainties: (1) the direction of change that will be taking place in a society that is ever more divisive, and in a world that is undergoing a cultural revolution; (2) the impact of the new educational technology; (3) its proper functions in terms of teaching, research and services; (4) the governance of the institutions; and (5) financing.[1]

NCHEMS recognized this need to gain insights into the changes that would be likely to occur in postsecondary education during the next five to fifteen years, and during early 1972 a survey was undertaken that focused on the long range directions of postsecondary education. The major purpose of this survey was to assure that the management concepts, tools, and procedures that NCHEMS is currently developing or has planned will be relevant when they are ready for implementation.

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[1] Kerr, Clark. "Destiny--Not So Manifest." Address presented at the Twenty-Sixth National Conference on Higher Education, American Association for Higher Education, Washington, D.C., 1971.

The survey method used was the DELPHI method, including computer technology and multiple rounds of questionnaires, which is a far cry from the original DELPHI technique--the Delphic oracles of Greece in the sixth century B.C. Then, the priestess Pythia merely sat on her golden tripod in the great temple of Apollo, and, after reaching a trance-like state, she spoke the oracles, answering all questions in a frenzied babble.

The DELPHI technique, as NCHEMS has used it, was developed by futurologists Dr. Olaf Helmer and Norman Dalkey at the RAND Corporation as a technique for soliciting and combining the opinions of experts. Its primary initial uses were in the area of technological forecasting, but more recently it has been employed to identify agreement concerning organizational goals and objectives. The key characteristics of the DELPHI approach are:

1. The anonymity of the survey panel members.
2. A statistical analysis of the panel's responses.
3. The use of controlled feedback to panel members in a series of successive rounds.

Basically, the DELPHI method attempts to bring together a group of experts in a "conference call" or "seminar" setting. But, through anonymity of the panel, the DELPHI method prevents the influence of some members of the panel from overriding or unduly swaying the opinions of the other panel members. In some sense, it prevents an important or very articulate expert from controlling the panel's opinion. The DELPHI method summarizes the responses

to one round of questions and provides this information to the survey panel with the next round of questions. In this way, the experts, while remaining anonymous, still communicate with each other in a limited fashion.

The NCHEMS DELPHI posed six questions over five survey rounds:

Round I: What are the possible changes that might take place?

Round II: What will be the impact of a change if it occurs, and what is the likelihood of the change occurring?

Round III: Posed these same questions again, this time with feedback of the Round II results.

Round IV: Asked the same questions as in Rounds II and III and posed the additional question: In what time period will the change occur?

Round V: Repeated the question introduced in Round IV with feedback, and added two questions: Should this change occur, and who will most affect this change?

In evaluating the results of the NCHEMS survey, one must consider who the panel members were as well as their answers. The names of the panel members cannot be given, as they remain anonymous in order to retain the confidentiality in which the panel gave their responses. Table 1 shows the primary position held by the 385 individuals who participated in the survey as well as the number holding that position and the percent responding during the survey.

Before examining the results of the survey it is important to consider that the analysis is subject to certain qualifications:

- The make-up of the survey panel is open to all sorts of questions, but any panel would have exhibited one sort of bias or another.

- The survey was completed before the final passage of the Higher Education Act of 1972.

- Undoubtedly the panel members had different interpretations of when a change can be said to have occurred widely enough to have an impact on planning and management.

A more detailed description of the survey methodology, qualifications, and a discussion of the criteria used in analyzing the survey data can be found in the complete analysis report of the survey, A Forecast of Changes in Postsecondary Education.

Table 1

PANEL RESPONSE ACCORDING TO PRIMARY POSITION

| Primary Position | Number in Group | Percent Responding |
|---|---|---|
| Federal Congressmen | 4 | 25 |
| State Governors or Executive Administrators | 4 | 100 |
| State Legislators | 9 | 56 |
| Federal Staff Members for (HEW, USOE, U.S. Congress) | 13 | 92 |
| Staff of Statewide Coordinating or Governing Board | 39 | 97 |
| Foundation Staff Members | 5 | 100 |
| Lay Board Members, Trustees, or Regents | 7 | 100 |
| Members of a National Education Association | 15 | 93 |
| Board Members or Commissioners of an Education Board or Commission | 13 | 92 |
| Staff Members for an Education Board or Commission | 19 | 100 |
| Members of an Accreditation Agency | 4 | 75 |
| Consultants in Postsecondary Education | 11 | 90 |
| Students | 15 | 93 |
| Members of an Educational Bargaining Unit | 3 | 100 |
| Faculty | 12 | 100 |
| College or University MIS Director or Staff | 39 | 100 |
| Department Chairmen or Deans of Academic Instruction | 15 | 93 |
| College or University Finance Administrators or Staff | 30 | 97 |
| College or University Directors or Staff for Institutional Research | 51 | 98 |
| College or University Directors or Staff for: Admissions, Personnel, Physical Plant, etc. | 19 | 100 |
| College or University Presidents or Vice-Presidents | 54 | 93 |
| Members of the Education Press | 4 | 50 |
| | 385 | 94% |

## THE RESULTS OF THE NCHEMS SURVEY

The 118 statements about change that were utilized in the survey covered six broad areas of postsecondary education:

1. Access and Participation
2. Competence and Performance
3. Educational Structure and Components (with major subcategories: Program Content, Administration, Faculty, and Students)
4. Resource Availability
5. Planning and Management
6. Nontraditional Education

The purpose of this section, then, is to present for each of these areas a set of general interpretations that have resulted from the author's analysis of the panel responses. It should be emphasized that these are the author's interpretations of the opinions of 385 persons affected by and involved in postsecondary education today. In arriving at these interpretations, particular reference has been made to the section "What Are the Changes" of the complete analysis report.

In each of the areas, the forecast provided by the NCHEMS DELPHI is as follows:

## Access and Participation

Perhaps the most important area of agreement among the survey panel was that by the late 1970s postsecondary education will be more readily accessible to all. Students will tend to be more casual about their participation in the postsecondary education process. They will attend full-time when they think it suits their needs and part-time on other occasions. They will increasingly drop in and out of the educational process as they desire, but there is no evidence that high school students will delay entrance into postsecondary education. The federal government will be a principal force encouraging this increased accessibility.

With increased accessibility, in what areas of postsecondary education will students participate?

At the graduate level, an increasing percentage of students will seek professional degrees as opposed to Ph.D. degrees. At the undergraduate level, there will be no discernible shift in emphasis from bachelor's degrees to associate degrees, but the proportion of students in vocational programs will increase, and the manpower needs of society will receive increased attention.

## Competence and Performance

While certification on the basis of competency will eventually become more routine, major changes are not likely to occur until after 1980, if at all.

In the 1970s, little success will be met in modifying the rigid structure of certification and evaluation. However, it should be noted that student experience in the nonacademic community will be increasingly accepted for academic credit. The analysis also shows that the emphasis on grades will not decrease.

## Structure of the Educational System

Postsecondary education will be more coordinated, the ease of transferability of credit will increase, and institutions will gradually begin to share resources. But the panel felt these changes would not be likely to cause institutions to become more alike. The control that may influence changes in the postsecondary education structure will arise without the federal government increasing its emphasis on developing a master plan for postsecondary education; it will come more from state level agencies.

## Program Content

The content of programs in postsecondary education will shift to give social problems and public service increased emphasis by the late 1970s. This will not, however, include ethnic studies, which will probably undergo a relative decrease in emphasis during this period. While institutions will place more emphasis on social problems, the role of institutions as direct change agents in society will not increase substantially.

Emphasis on research as a major program of institutions will tend to stabilize, but postsecondary education itself will be the topic of more of the research and development activities. In four-year colleges and universities there will be an increased emphasis on upper-division and graduate programs.

## Faculty

The relationship of the faculty to management will be a subject of ferment during the 1970s. There will be an increase in collective bargaining. Understandably, then, the panel felt that faculty will not have a larger role in the formal governance of their institution. It is unlikely that faculty tenure will be eliminated, but the faculty will have less freedom relative to workload and activities. There will be an increased emphasis on teaching and little change in the "publish or perish" concept.

## Students

Housing for students will generally be reduced. However, cutbacks in other student services such as recreation, health, and counseling will not be likely to occur until the late 1970s, if at all. Institutions will be likely to drop the "in loco parentis" concept. Institutions will not provide a larger governance role for students prior to the end of the decade.

## Educational Technology

Changes in educational technology will occur later than other changes in the educational structure. Even after 1980 the emphasis on the techniques of teaching and processes of learning will not have changed relative to the emphasis on subject matter. Changes that seem likely to occur include increased flexibility and versatility in educational facilities and increased use of TV, computers, and new instructional technologies. The increased flexibility will extend to the facilities themselves, which will be used more hours of the day and more days of the year. The most distant prediction of the panel finds psychopharmacy and psychoelectronics unlikely to come into use to induce or augment learning before the 1990s, if at all, and the majority felt such a change should not occur.

## Resource Availability

Funding sources will give closer scrutiny to the utilization of available resources, and new planning and management techniques will be used in this scrutiny. At the same time, the panel felt it unlikely that the general level of resources available to postsecondary education will decline. Smaller and smaller amounts will be spent for new capital construction in larger institutions.

In spite of the labels that may be attached, funding from federal sources will increasingly deemphasize general aid. Total federal and state

dollars to private institutions and to students directly will increase during the next decade.

## Planning and Management

Educational outcomes will be an integral part of the analysis of postsecondary education by the late 1970s. The use of new planning and management techniques will increase, as will the requirement for comparability and compatibility of data. The faculty and students involved in the governance of institutions will continue to support their individual group directions rather than the collective goals and objectives of the institution.

## Nontraditional Education

The panel felt that the roles of nontraditional institutions vis-a-vis those of colleges and universities would not change in the 1970s. This perceived stability is probably explained by the make-up of the panel, which was heavily oriented toward traditional higher education. It also no doubt reflects the fact that the survey was conducted prior to the passage of the new higher education legislation.

## In What Areas Will Change Occur?

Let us consider the relationship of the total panel's opinions about the areas in which charges will most likely occur, the areas in which change will have the greatest impact, and the areas in which change will occur

first. Table 2 shows that changes in planning and management are the most likely to occur and that the educational structure is least likely to change.

In considering the impact of changes, the panel felt changes in planning and management would have the highest impact and changes in the educational structure the least impact. The only difference between the impact and likelihood columns is in the items "access and participation" (seen as more likely to increase and yet lesser in impact) and "resource availability" (seen as a high-impact factor not likely to increase). The panel's responses forecast changes in access and participation occurring earliest and changes in competence and performance occurring last. One possible reason that changes in competence and performance will occur later than other changes is that this is the only area in which the panel consistently identified one force (the faculty) as most hindering change.

Finally, an interesting note about which subgroups of the panel feel changes in general are more likely to occur with a greater impact and at an earlier time. When the panel subgroups are ranked on the basis of a combined high impact, high likelihood, and earliest time score, as shown in Table 3, the order of the panel subgroups is from federal down through the organizational levels to the students, with the federal members saying more can be done at an earlier time and with a greater impact.

TABLE 2

TOTAL PANEL OPINION BY GROUPS OF CHANGE STATEMENTS

| HIGH IMPACT | HIGH LIKELIHOOD | EARLY TIME |
|---|---|---|
| PLANNING AND MANAGEMENT | PLANNING AND MANAGEMENT | ACCESS AND PARTICIPATION |
| RESOURCE AVAILABILITY | ACCESS AND PARTICIPATION | RESOURCE AVAILABILITY |
| COMPETENCE AND PERFORMANCE | COMPETENCE AND PERFORMANCE | PLANNING AND MANAGEMENT |
| NONTRADITIONAL EDUCATION | NONTRADITIONAL EDUCATION | EDUCATIONAL STRUCTURES |
| ACCESS AND PARTICIPATION | RESOURCE AVAILABILITY | NONTRADITIONAL EDUCATION |
| EDUCATIONAL STRUCTURES | EDUCATIONAL STRUCTURES | COMPETENCE AND PERFORMANCE |
| LOW IMPACT | LOW LIKELIHOOD | LATER TIME |

Table 3

THE OPINION OF PANEL SUBGROUPS RANKED BY

HIGH IMPACT, HIGH LIKELIHOOD, AND EARLIEST TIME

| | |
|---|---|
| Highest Impact and Likelihood, Earliest Time | Federal |
| | National Education Associations |
| | Regional Organizations |
| | State |
| | Department Chairman and Faculty |
| Lowest Impact and Likelihood, Latest Time | Students |

## THE IMPLICATIONS FOR CHANGE IN MANAGEMENT

An analysis of the forecasted changes based on the survey results highlights some of the following important impacts on planning and management.

The forecast that postsecondary education will be more accessible to all leaves one with the question "Just what is this increased assessibility?" The answer to this question may influence changes in management at the institutional, state, and national levels. As part of the process by which the federal government determines the financing plan for higher education, Congress will consider the impact of alternative financing plans on accessibility. Accessibility can mean access to admissions, access to continued success in higher education, or access to a degree or certification. The funds required for increased accessibility are much greater if it means removing the roadblocks to a higher degree rather than initial access or admission. The management process of the institution could also change in considering effective methods of dealing with potential dropouts and adjusting the system to ensure their access to a degree.

Institutional managers will need to find a way to cope with the admissions problems of increased numbers of in-and-out students--stopouts. One of the problems that will arise as more and more students drop in and out of the education process is the likelihood of a decline in stability of enrollments and a corresponding increase in the complexity of forecasts used to project enrollments. This means it will be more difficult to identify future needs for institutional capacity. A second problem will be to keep a complete history of students who have dropped out and their current educational status.

As the number of part-time students increases, administrators will be hard pressed to provide the necessary services, which in many cases require the same amount of administrative resources for processing full- or part-time students, and it will be much more difficult for higher education to deal with students as individuals.

Changes in the management of certification will be required to control the granting of external degrees and to prevent the establishment of "diploma mills." On the other side, accreditation associations will need management flexibility to deal with an increased variety of higher education institutions offering a wider choice of programs, including vocational programs.

As credit toward certification is provided for work in areas other than formal academic programs, institutional management will need to develop methods to define the amount of credit to be given for work or service experience.

The changes in faculty and their relationship to the institution will require institutional management to live in a collective bargaining environment. The administrator may use information from faculty activity analyses to assist in the bargaining process, but the main problem the administrator will face is the decrease in resource flexibility as faculty-institution relations become more rigid. The solutions open to management may include revising hiring policies for the institution (i.e., joint appointments, part-time faculty, etc.) and making definite choices between faculty and new technology.

As public service gains increased importance and the research and instruction functions do not decline, management will have more difficulty in allocating funds to programs. The cost of new technological equipment for instruction will eventually present additional funding difficulties. This, coupled with a more rigid instructional structure (i.e., resource scrutiny, faculty relations, etc.), means the flexibility of dollars will decrease. One area in which there may be a shift in funds is from certain student support activities, particularly housing, to other needy areas.

As state agencies become a major force in governance changes in education, institutional management will need to learn to live with this force as well as with an increased amount of federal interaction. The new management tools will give some basis for maintaining institutional control by providing the information necessary to communicate to and with federal, state, and faculty forces. There will also be an increasing need to develop and implement standard procedures for reporting and exchanging information. The use of such new planning and management procedures will require additional time of administrators and managers for understanding the new techniques and the information they can provide.

Management will in many cases be faced with the governance of an internal struggle between the forces supporting change and those opposing change. As the administration is forced to take sides in resolving such conflicts, the freedom of managerial movement relative to these opposing forces will be restricted.

## A DESCRIPTION OF OTHER SURVEY REPORTS

This report deals with the major highlights of the forecasted changes and their impact on management. Additional information can be obtained from the following NCHEMS reports:

1. A Forecast of Changes in Postsecondary Education, the complete analysis and forecast of changes in postsecondary education made in the NCHEMS DELPHI survey.

2. Methods for Large-Scale DELPHI Studies, a documentation of the methodology used by NCHEMS in conducting a DELPHI study with a large panel. This report should benefit future NCHEMS studies and the educational community, since the large number of factors impinging on postsecondary education will dictate panels of more than 100, and large-scale DELPHI studies do present a number of technical and logistical problems.

3. Documentation of Large-Scale DELPHI System Software, a complete documentation of the computer software developed for the NCHEMS DELPHI survey. This software is available as Type II NCHEMS software, available at cost but with no guarantee or program support.

4. Data from the NCHEMS Future Planning and Management Systems Survey, a complete documentation of the NCHEMS DELPHI survey data base. This data base is available at cost to anyone wanting to do additional research on the data.

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